Supporting Information

In situ polymerized polypyrrole/halloysite nanotubes-silver nanoflowers based wearable pressure sensor with large measurement range and high sensitivity

Chen Du, Yong Zhang*, Dongzhi Zhang*, Bao Zhang, Wenhao Zhao

College of Control Science and Engineering, China University of Petroleum (East China), Qingdao 266580, China

*Corresponding author: Yong Zhang, Dongzhi Zhang

E-mail address: paul_zhangyong@163.com, dzzhang@upc.edu.cn

Tel: +86-532-86982928

Fax: +86-532-86981335

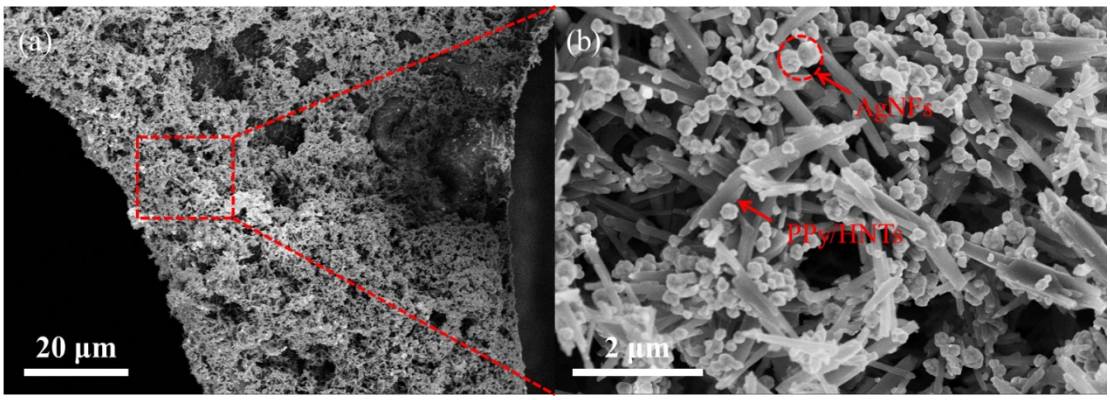

Figure S1. SEM images of PPy/HNT/AgNFs sponge.

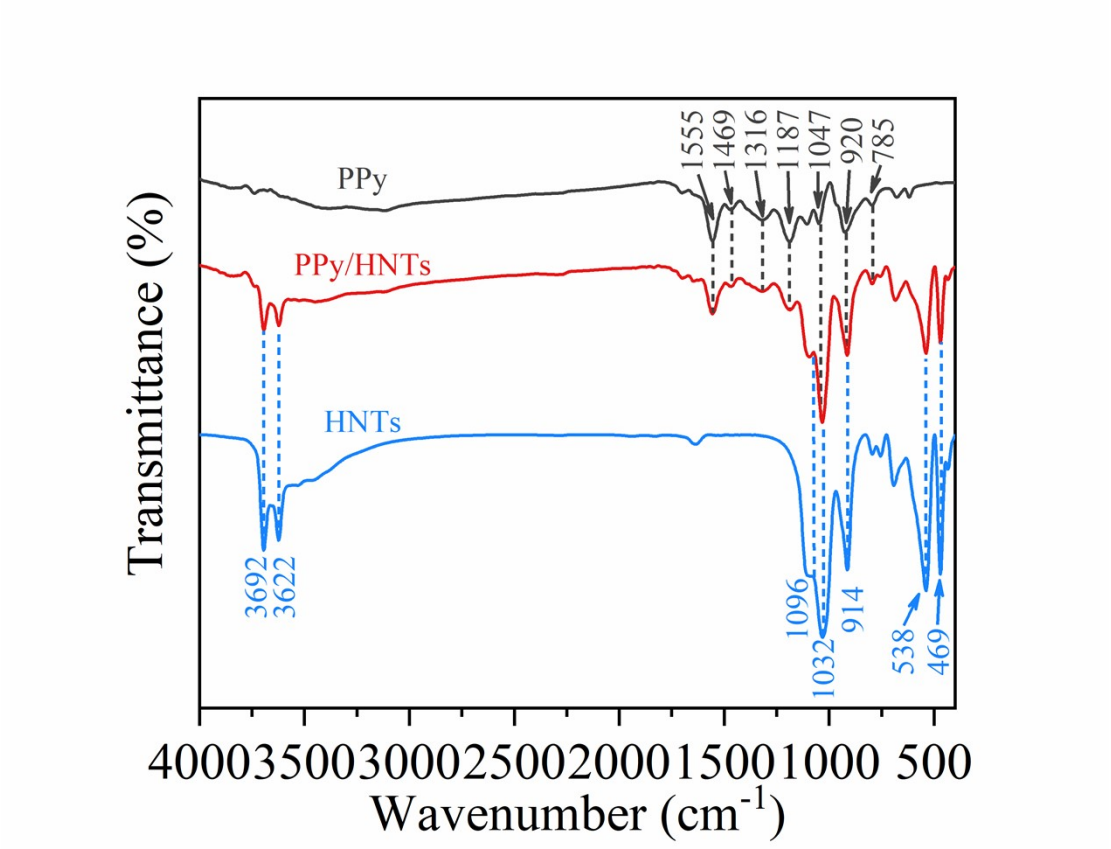

Figure S2. FTIR spectra of PPy, HNTs and PPy/HNTs.

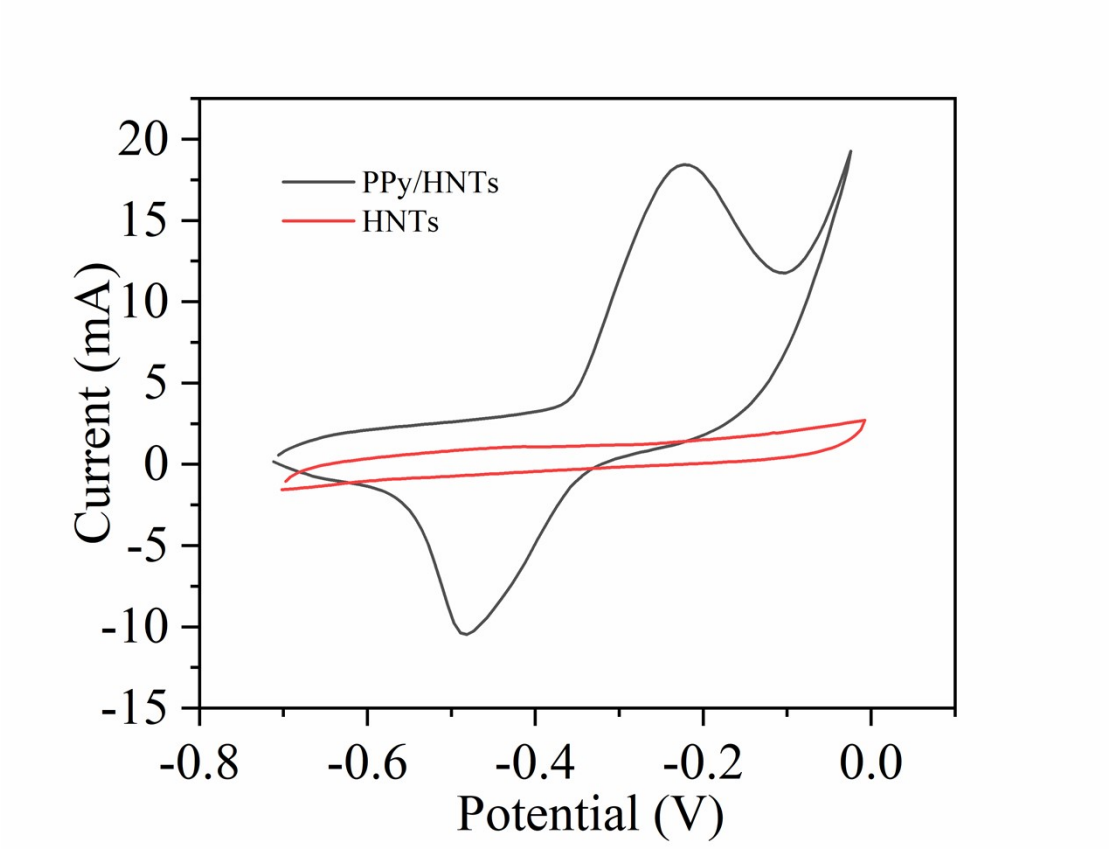

Figure S3. CV curves of PPy/HNTs and HNTs.

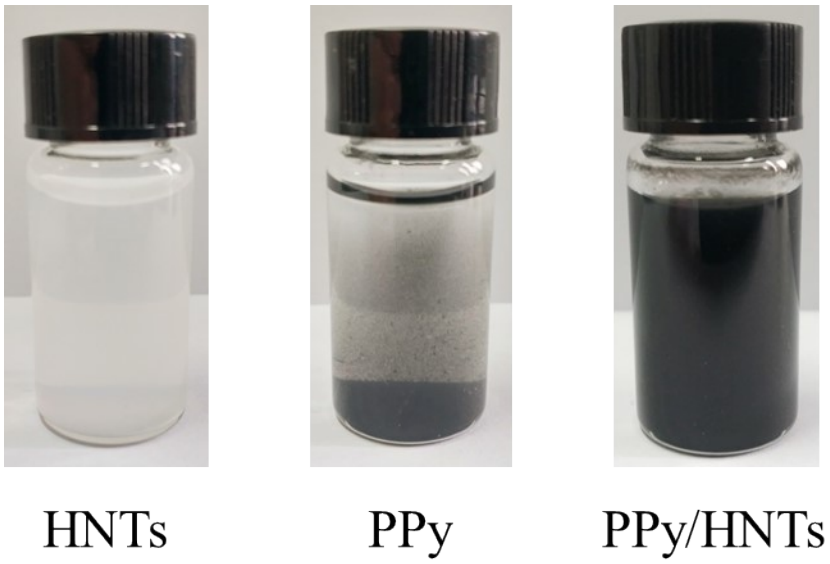

Figure S4. Optical images of HNTs, PPy and PPy/HNTs solution.

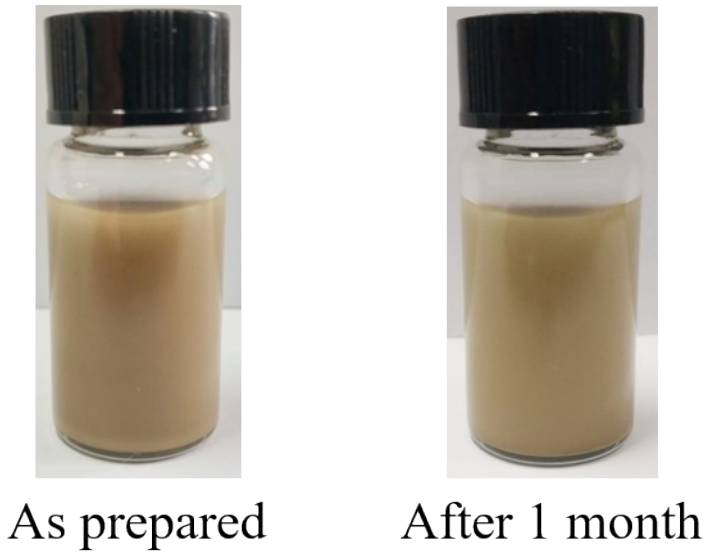

Figure S5. Optical images of Ag NF solution

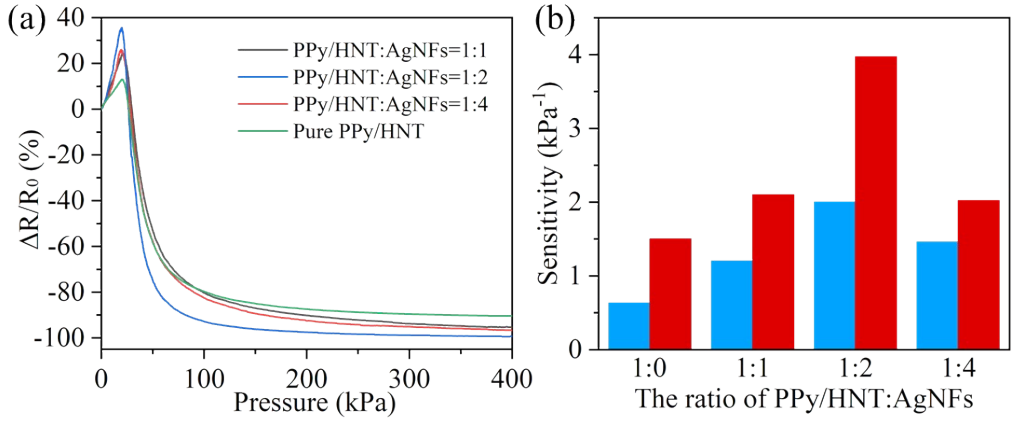

Figure S6. (a) The effect of the ratio of PPy/HNT and AgNFs on the sensing performance of pressure sensors from 0 kPa to 400 kPa. (b) The sensing response comparison of different PHAP pressure sensors.

The resistance value of the PPy@PU sensor obtained by immersing the PU sponge in the PPy solution was too high. This is due to the very poor dispersion of the self-polymerized PPy in water (Fig. S4), which prevents the formation of a complete conductive network on the PU sponge. Therefore, we only show the sensing performance of PPy/HNTs and AgNFs in different ratios (Fig. S6).